



PTO/SB/08A (07-05)
Approved for use through 07/31/2006. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 1 of 3

Complete if Known

Application Number	10/615,552
Filing Date	07/08/2003
First Named Inventor	Ian Robert Appelbaum
Art Unit	2815
Examiner Name	Jerome Jackson, Jr.
Attorney Docket Number	129-001

Examiner Initials*	Cite No. ¹	U. S. PATENT DOCUMENTS			
		Document Number Number-Kind Code ² (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		US- 6154475	11/28/2000	Soref	
		US- 6031273	2/29/2000	Torok	
		US- 5973334	10/26/1999	Mizushima	
		US- 5432373	7/11/1995	Johnson	
		US- 5334854	8/2/1994	Ono	
		US- 5079774	1/7/1992	Mendez	
		US- 4800415	1/24/1989	Simmons	
		US- 4710936	12/1/1987	Shibata	
		US- 4473834	9/25/1984	Soclof	
		US- 2002/0085332	7/4/2002	Ide	
		US- 6340826	1/22/2002	Iliadis	
		US- 6493196	12/10/2002	Noma	
		US-			
		US-			
		US-			

Examiner Initials*	Cite No. ¹	FOREIGN PATENT DOCUMENTS			
		Foreign Patent Document Country Code ² Number ³ Kind Code ⁴ (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages Or Relevant Figures Appear
		JP61270885A	12/1/1986	Mori	
		DE3225630A1	1/12/1984	Preissner	
		JP06-163983	6/10/1994	Jlee Kee Towainamu	
		JP01-185968	07/25/1989	Yamada Toshishige	
		JP61-231788	10/16/1986	Mori Yoshihiro	

Examiner Signature		Date Considered	7/106
--------------------	--	-----------------	-------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. ¹ Applicant's unique citation designation number (optional). ² See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁶ Applicant is to place a check mark here if English language translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449/PTO

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

(Use as many sheets as necessary)

Complete if Known

Application Number	10/615,552
Filing Date	07/08/2003
First Named Inventor	Ian Robert Appelbaum
Art Unit	2815
Examiner Name	Jerome Jackson, Jr.
Attorney Docket Number	129-001

Sheet

2

of

3

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
		MONSMA, DJ, et al, Perpendicular Hot Electron Spin-Valve Effect in a New Magnetic Field Sensor: The Spin Valve Transistor, Physical Review Letters, Vol 74, no. 26 6/26/95	
		MARCO MASTRAPASQUA, et al, Light emitting charge injection transistor with p-type collector, Appl. Phys. Lett. 60 (19), 11 May 1992	
		MARCO MASTRAPASQUA, et al, Light emitting Transistor Based on Real-Space Transfer: Electrical and Optical Properties, IEEE Trans on Elect. Dev. vol 40, No. 2, Feb 1993	
		G.L. BELENKY et al, Collector-up light-emitting charge injection transistors in n-InGaAs /InAlAs/p-InGaAs and n-InGaAs/InP/p-InGaAs heterostructures, J.Appl.Phys.73(12) 6/15/93	
		J. GENOE, pnp resonant tunneling light emitting transistor, Appl. Phys. Lett. 61 (9) 31 August 1992	
		LUDMILA BAKUEVA et al, Multi-layer contacts for organic light-emitting diodes w/ enhanced injection effic., Organic optoelectronic Materials, MRS, SC Moss, Ed, v. 708, 2002	
		YIPING HE et al, Hybrid magnetic tunnel junction/vertical cavity surface emitting laser field sensor device, Electronics Letters, 11/22/01 vol. 37, no. 24	
		X. JIANG, et al, Optical Detection of Hot-Electron Spin Injection into GaAs from a Magnetic Tunnel Transistor Source, Phys Rev Let., V 90, No. 25, 27 June 2003	
		IAN APPELBAUM et al, Ballistic electron emission luminescence, Applied Physics Letters, Vol 82, No. 25, 23 June 2003	
		IAN APPELBAUM et al, Experimental test of the planar tunneling model for ballistic electron emission spectroscopy, Physical Review B 67 155307 (2003) 10 April 2003	

Examiner Signature		Date Considered	7/06
--------------------	--	-----------------	------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

1 Applicant's unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached. This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

Substitute for form 1449/PTO

(Use as many sheets as necessary)

Complete if Known

Application Number	10/615,552
Filing Date	07/08/2003
First Named Inventor	Ian Robert Appelbaum
Art Unit	2815
Examiner Name	Jerome Jackson, Jr.
Attorney Docket Number	129-001

Sheet	3	of	3
-------	---	----	---

[illegible]

Examiner Signature	<i>Chackov</i>	Date Considered	7/06
-----------------------	----------------	--------------------	------

1 Applicant's unique design designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached. This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.